

CONTROLLING CHRONIC WASTING DISEASE IN WISCONSIN



A PROGRESS REPORT AND LOOK TOWARD THE FUTURE



Wisconsin Department of Natural Resources
Bureaus of Wildlife Management and Integrated Science Services

PUB-CE-461 2005

Controlling Chronic Wasting Disease in Wisconsin:

A Progress Report and Look Toward the Future

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2005

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Chronic wasting disease (CWD) belongs to a group of fatal diseases of animals known as transmissible spongiform encephalopathies or TSEs. Other TSEs include scrapie in sheep, bovine spongiform encephalopathy (BSE, also called “mad cow disease”) in cattle, and Creutzfeldt-Jakob disease of humans. TSEs are thought to be caused by an abnormal form of a protein called a prion. Infection occurs by conversion of normal prion proteins into a disease-associated, misfolded form that is highly resistant to degradation. CWD is characterized by slow accumulation of abnormal prions in nervous and lymphatic tissues. Clinical signs of the disease typically appear after more than 1.5 years, as accumulation of prions causes microscopic holes in brain tissues. Animals in later stages of the disease exhibit behavioral changes and progressive weight loss. The clinical signs are not unique to the disease and each could be due to another condition such as malnutrition, vehicle trauma, etc. Currently, there are no proven treatments or vaccines for prion diseases and all infections are believed fatal.

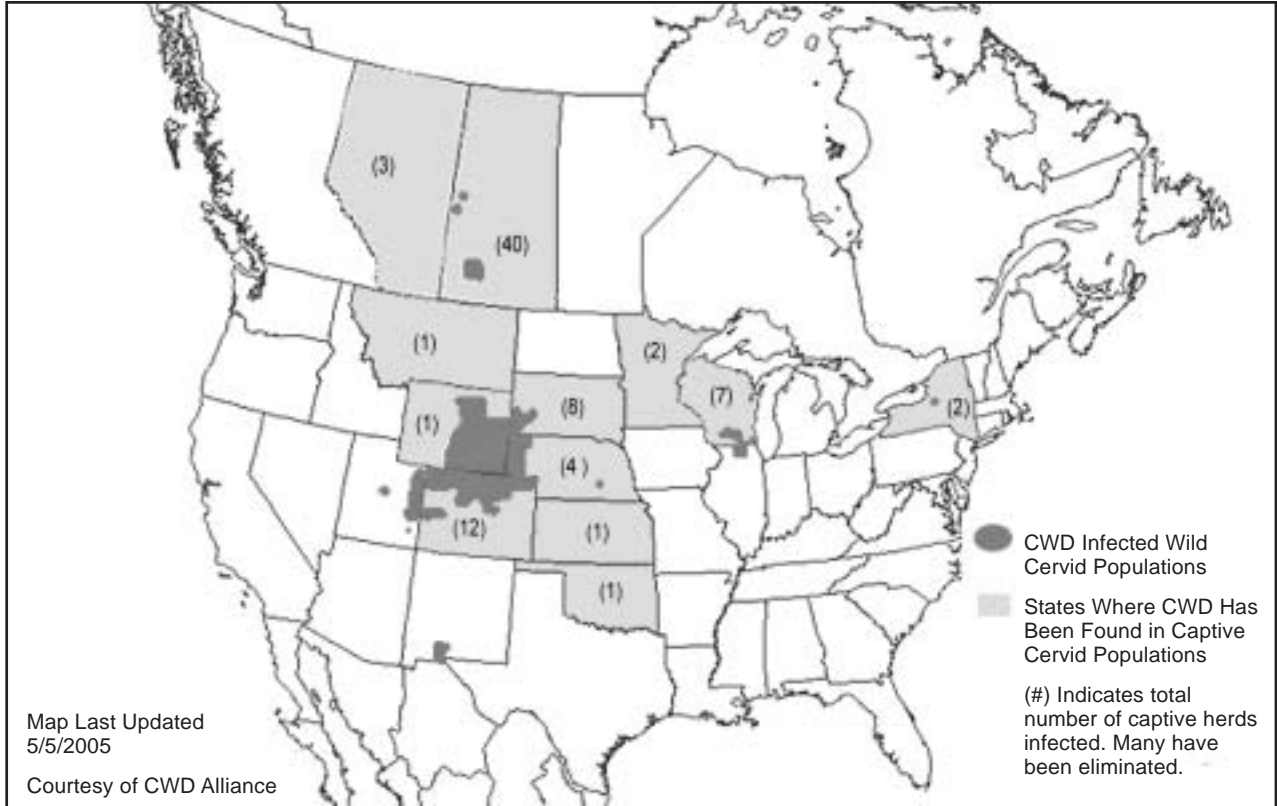
CWD is a Risk to Deer and Deer Hunting Which are Important in Wisconsin

The discovery of CWD in southern Wisconsin represents a significant threat to the state’s white-tailed deer population and the culture of deer hunting in the state. Wisconsin has more than 700,000 deer hunters who have harvested an average of 460,000 deer annually during the past decade. Deer hunting contributes more than 7 million days of recreation each year. In 2001, deer hunting generated more than \$500 million dollars in retail sales and nearly \$1 billion in total impact to the state’s economy. Deer are also important to non-hunters. In 2001, an estimated 2.2 million state residents participated in wildlife-watching activities and deer are among the most popular species for wildlife watching. In addition, nearly 300,000 nonresidents made trips to Wisconsin in 2001 to observe wildlife.



Wildlife disease experts have concluded that in the absence of management intervention, CWD will most likely increase in prevalence and distribution. There is no evidence that CWD will “burn itself out” if left alone. Further there is no evidence of genetic resistance to CWD in white-tailed deer or mule deer. A simulation model suggests that if left unmanaged over the next 10-30 years, CWD will spread widely throughout Wisconsin and will substantially increase in prevalence to more than 40% of adult deer. Simulations of effects on deer population size in the CWD affected area depend on the assumptions made about the transmission process, but all models show a moderate to substantial long-term reduction in deer population density. The model simulations are consistent with recent findings from Colorado that have shown increases in prevalence over the past few years in numerous local populations. Prevalence on some local winter ranges now exceeds 25-30%. In addition, the known affected area in both Colorado and Wyoming has expanded to the west and northwest more than 100 miles during the past 5 years.

Distribution of CWD in Captive and Wild Deer and Elk in North America



The discovery of CWD in 2002 was associated with a 10% reduction in deer license sales. License sales recovered somewhat in 2003 once statewide surveillance indicated that CWD is limited to the southern part of the state. Although there is no known instance of CWD affecting people, many hunters remain concerned because of a perceived similarity between CWD and BSE (mad cow disease). National and international human health agencies currently advise against consuming meat from CWD-infected animals.

Should the prevalence and distribution of CWD increase dramatically, the disease could severely impact the social and economic stability of the communities that depend on hunting. Sociological surveys of deer hunters suggest that nearly half would stop hunting if CWD prevalence increased to 50% and losses of deer hunters would be even greater if a linkage is ever confirmed between CWD and human disease. This could have significant effects on the economic vitality of rural communities that are dependent on hunting revenue, the preservation of cultural and family traditions, management and control of deer populations, wildlife agency revenue, and public support for wildlife management. If prevalence or distribution of CWD increases substantially it is likely that hunter demand for CWD testing of individually harvested deer will rise.

Wisconsin's CWD Management: The Plan

Because of the many scientific uncertainties regarding the basic biology and ecology of CWD, management must be considered experimental; there are no established protocols or proven solutions. However, wildlife disease experts agree that this should not be used as an argument for waiting for new research or for doing nothing. Because CWD behaves, in general, in a manner similar to many infectious diseases, it is reasonable to expect that management techniques used for other chronic, late-onset infectious

diseases are appropriate for CWD. However, management should be conducted within an adaptive framework that includes methods to assess the effectiveness of management actions in controlling the disease. As new research information becomes available and as the results of current management actions are assessed, techniques should be reviewed and adjusted or replaced if appropriate. The effectiveness of management actions will be assessed primarily by monitoring changes in geographic distribution and prevalence of CWD. Therefore, intensive disease surveillance must be an integral component of the CWD management program.



Following the discovery of CWD in Wisconsin a management plan was developed by an interagency partnership between the departments of Natural Resources; Agriculture, Trade, and Consumer Protection; and Health and Family Services, together with the University of Wisconsin, U.S. Department of Agriculture, and the U.S. Geological Survey's National Wildlife Health Center and Cooperative Wildlife Research Unit. The goals for CWD management in Wisconsin are to minimize the negative impact of chronic wasting disease on wild and captive cervid populations, the state's economy, hunters, landowners and others people dependent on healthy wild and farmed populations of deer and elk. The 5 major actions to accomplish these goals are 1) surveillance, 2) human health protection, 3) research, 4) communications, and 5) disease prevention and control.

Wisconsin's CWD management program is based on the following assumptions: (1) Chronic wasting disease is a transmissible spongiform encephalopathy caused by prions that are spread by direct contact between animals but also may be transmitted indirectly via environmental contamination. (2) Chronic wasting disease was introduced into the state, is not part of our native ecosystems, and its distribution is limited to areas in southern Wisconsin. (3) If left uncontrolled, chronic wasting disease could have a significant negative impact on white-tailed deer populations, and its presence diminishes the real or perceived value of deer and elk. (4) High host animal density and frequent animal contact are associated with increased transmission and prevalence of the disease. (5) Chronic wasting disease will not disappear spontaneously in the absence of management actions, and restrictions on human activity are necessary to prevent its spread into new areas.

In April 2003, an external panel of wildlife disease experts evaluated Wisconsin's CWD management program. The panel concluded that the Department's overall goal of "*minimizing the negative impact of chronic wasting disease on cervid populations, the state's economy, hunters, landowners and others who are affected by deer management policies*" is a comprehensive and laudable goal. They further concluded that the objective of eradicating CWD in the limited areas where it occurs, before it can spread throughout the state, is entirely appropriate and consistent with the *Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic Wasting Disease in Wild and Captive Cervids* (National CWD Plan) and the *Multi-state Guidelines for Chronic Wasting Disease Management in Free-ranging White-tailed Deer, Mule Deer, and Elk* (Multi-state CWD Guidelines). The external review panel also concluded that the assumptions on which the management plan is based are valid in view of the current scientific knowledge of CWD.

The management of disease in free-ranging wildlife populations is difficult, expensive, and can be controversial, particularly when marked population reduction is a component of the plan. Management of CWD in a high density, free-ranging, white-tailed deer population is unprecedented. Some stakeholders regard Wisconsin's disease eradication policy as inappropriate because proven techniques are not available. Opposition to the CWD management plan by the public, especially landowners in the Disease Eradication Zone, represents a potentially significant obstacle to CWD eradication; success of the DNR management plan is highly contingent upon public acceptance and participation. The Program Review Panel recommended that the DNR clearly state to the public that CWD poses risks to Wisconsin's deer and those who appreciate them; that the lack of proven techniques to eradicate CWD does not justify inaction; that the management plan employs the best available techniques; and that the DNR is engaged in data collection and research to assess management actions and will continue to modify them to increase their efficiency and decrease negative impacts on the stakeholders when possible. The Program Review Panel concluded it is currently not possible to predict whether CWD will be eliminated from Wisconsin, although the consequences of inaction or inadequate response are clear: the prevalence and geographic distribution of CWD will increase.

Even if disease eradication ultimately proves not to be possible, many wildlife disease experts believe Wisconsin's current management efforts are appropriate because they should prevent or limit the spread of CWD. Population reduction decreases the concentration of deer within areas known to be infected, thereby limiting opportunities to transmit the disease.

Results to Date

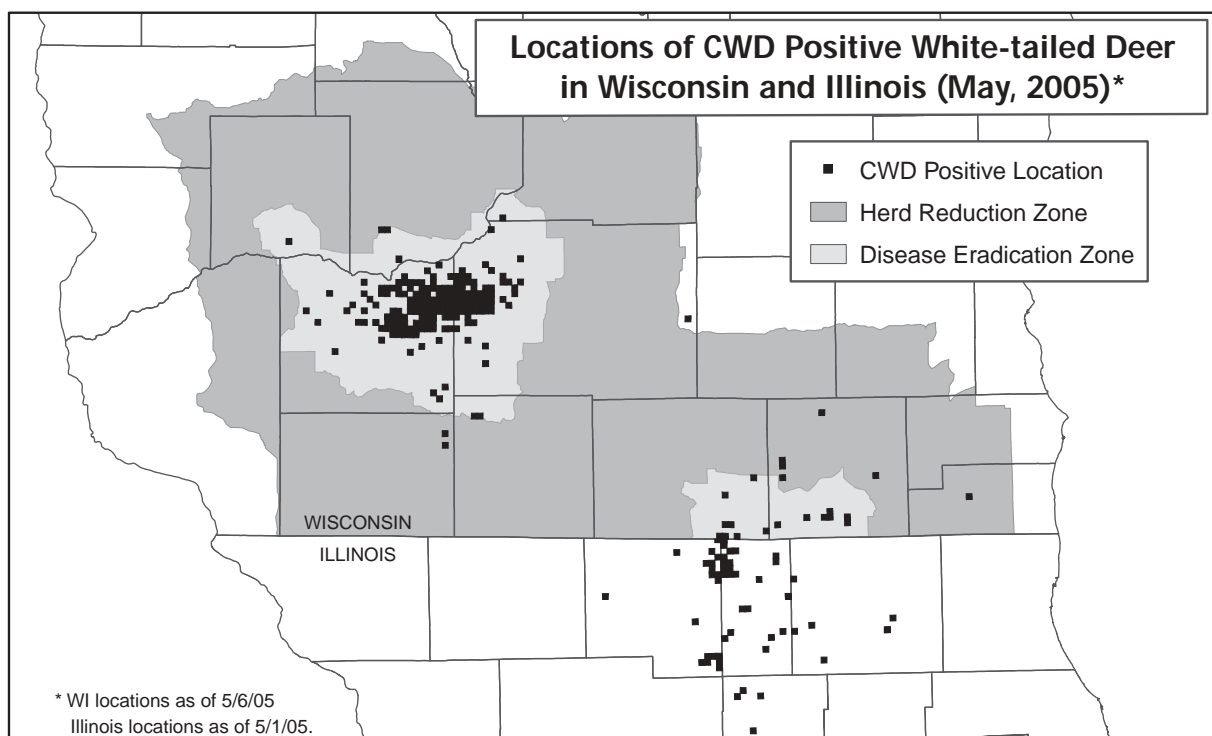
Surveillance

The DNR began active surveillance for CWD in 1999 following increased national awareness of interstate transport of elk from CWD-infected western farms. Through fall 2001 approximately 1,100 hunter-harvested deer had been sampled from across the state. In February 2002 the DNR was notified that 3 deer harvested from Deer Management Unit 70A in western Dane County tested positive for CWD. During March and April 2002, 516 deer were collected from a 12-mile radius surveillance area around the 3 initial cases. Fifteen of these deer tested positive for CWD.

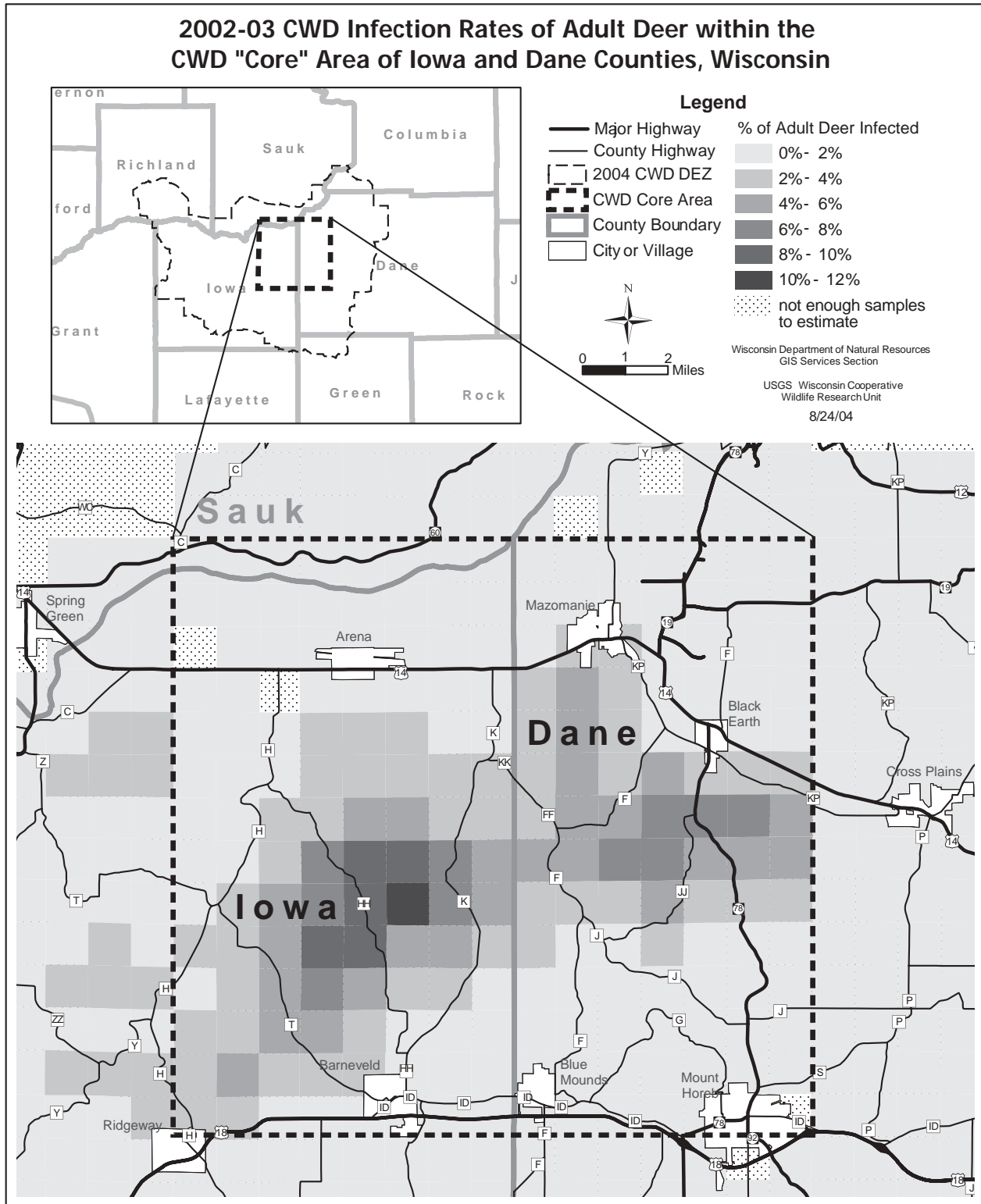
An extensive CWD surveillance program has been conducted starting in fall 2002. Through April 2005, over 75,000 deer have been tested from across the state. Sample intensity has been sufficient in the majority of the state to have a high degree of confidence that CWD would have been detected if it exists at 1% prevalence.

As of April 2005, a total of 470 free-ranging deer have tested positive for CWD, 445 in southwestern Wisconsin, 24 in 3 southeastern counties along the Illinois border, and 1 in eastern Dane County between the 2 outbreaks. The distance between the southwest and southeast outbreak areas and the intensive surveillance that has been conducted in the intervening area suggests that these areas may represent separate introductions. The southeast cases are adjacent to an outbreak in northeastern Illinois where 96 CWD positive deer have been found since 2002.

Analysis of the geographic distribution of the southwest Wisconsin outbreak showed that the pattern of positives is not random, but is tightly clustered. Although the total affected area is more than 1,300 mi², more than 80% of the positive deer are in a 126-



mi² area bounded by Spring Green, Mazomanie, Black Earth, Mount Horeb, and Ridgeway. The geographic distribution of positives within the southwest cluster has been similar the last three years. Within the cluster's core, high-prevalence area, prevalence among adult deer was similar in 2002, 2003, and 2004, approximately 5%. Within the center of the core area a few sections had prevalence of 8-12%.



Analysis of the sex and age composition of positive deer has shown that very few fawns are infected; only 10 out of more than 7,500 tested. Disease prevalence increases with age and the rate of increase is faster in males than in females. Only 2-3% of yearling females and males from the core area have tested positive for CWD. This increased to 4% of females and 10% of males for deer 3 years old or older.

Disease surveillance activities in 2004 focused on 1) the known affected areas in southwest and southeast Wisconsin, 2) the area surrounding the known affected areas, i.e., the herd reduction zone, and 3) selected areas of higher risk in proximity to infected cervid farms. In addition, suspect deer matching the clinical profile for CWD were tested throughout the state. A second round of statewide testing is currently planned to begin in 2005 and may take several years to complete. Additional surveillance activities around the eastern Dane County positive will be needed in 2005 to determine the significance of this case.

Human Health Issues

Although there is no evidence that CWD has ever caused illness in people, because BSE has been linked to the new variant form of Creutzfeldt-Jakob disease in humans, uncertainty remains about the health risk posed by CWD. International health authorities continue to recommend that deer known to be infected with CWD not be consumed by people and that people avoid consuming certain tissues where prions accumulate. The Department of Health and Family Services has been conducting surveillance for CJD to assess potential relationships between CJD and CWD. This surveillance is based on reports from health care providers as well as ongoing reviews of all death certificates.



From 1997 through 2003, there have been 17 autopsy-confirmed cases of CJD and 20 possible/probable cases reported through this surveillance. All the confirmed cases are consistent with the classic form of CJD and do not have the characteristics of variant CJD. When both possible and confirmed cases are considered, the average annual incidence of CJD in Wisconsin is about one per million, which is consistent with CJD incidence worldwide.

DATCP and DNR have worked closely with meat processors to revise butchering procedures so that tissues in which prions concentrate are removed during processing. DATCP and UW Extension have provided hunters with common-sense guidelines for venison processing to minimize any risk.

Hunters who hunt in the CWD affected areas can request to have their deer tested free of charge. Hunters whose deer test positive for CWD are notified by telephone while those whose deer test negative are mailed a postcard. Hunters can also check the test results for their deer on the DNR's CWD web site. Elsewhere in the state a Hunter Service Testing Program has been developed to provide hunters the opportunity to have their deer tested for CWD. This program is a cooperative effort between the DNR, DATCP, Wisconsin Veterinary Medical Association, Wisconsin Veterinary Diagnostic Laboratory, and the U.S. Department of Agriculture. The program is built upon a network of private veterinary practitioners who are trained and approved to extract samples for CWD testing.

Carcass Disposal

The Interagency CWD Health and Science Team extensively evaluated available methods for disposal of deer carcasses and butcher waste to minimize the risk to human and animal health. Based on this evaluation, the DNR concluded engineered sanitary landfills provided a safe and effective means to control the CWD disease agent. However, because of concerns by local governments, landfill operators, and municipal waste water treatment facilities more intensive disposal procedures have been implemented during the past 3 years.



In 2002 we used a “frost and toast” option where carcasses were sampled and held in refrigerated semi-trailers until test results allowed for sorting of positive and negative animals. All negative animals were land filled. All CWD positive animals, butchered waste, heads and car-killed deer were incinerated. The 2002 season generated over 1.1 million pounds of waste with hunters keeping 43% of the deer that were shot.

The 2003 season was similar to the first with the “frost and toast” option selected as the preferred alternative with carcasses stored in refrigerated semis and sorting after test results were made available. Positive animals were either incinerated or chemically digested. The amount of waste handled through incineration and chemical digestion amounted to 633,000 pounds with hunters keeping 78% of the deer harvested.

In 2004 a food pantry program was initiated so hunters could donate negative tested animals from the DEZ. Positive animals, butchered waste, heads, and car-killed deer were principally disposed of through chemical digestion with incineration as a back-up. To date 382,000 pounds of waste were disposed of through chemical digestion and incineration. Hunters kept 85% of the deer that were harvested and over 2,200 additional deer were donated through the food pantry program.

Research

A comprehensive interagency CWD research plan was developed in 2002 to determine what was currently known about CWD and CWD control strategies and what key information was needed to manage CWD in Wisconsin. Compared to many other diseases, relatively little was known about CWD and effectiveness of control strategies. Research priorities were identified in 5 broad areas: disease ecology, deer ecology, human ecology, diagnostics, and human health implications of CWD.



Because of the need to implement the disease control program quickly, an adaptive management approach integrating research and management activities was identified as a key component of the CWD control strategy. This facilitates learning about the disease as we manage. Long-term disease and deer population monitoring programs were identified as critical for assessing the effectiveness of the proposed disease control strategies.

There are 34 CWD research studies currently underway in Wisconsin. Another 12 studies are underway in other states with which we are collaborating by providing data and/or tissue samples. These studies are being conducted and funded by many partners such as University of Wisconsin and the USGS National Wildlife Health Center. Coordination of these studies is being done by an interagency team to insure research is focused on high priority needs for managing CWD in Wisconsin, to promote collaboration among scientists, to facilitate data sharing, and to promote joint problem solving.

These research studies include topics such as:

- Deer dispersal, social behavior, and mortality;
- Disease ecology, including genetic resistance of deer to the disease;
- Comparing Wisconsin CWD strains to those found on other parts of the continent;
- Spatial patterns and prevalence of CWD in SW and SE Wisconsin;
- Transmission mechanisms, including the effects of baiting and feeding and between does and fawns before they are born;
- Dynamics of CWD prions in the soil;
- Susceptibility of other species, such as cattle and scavengers, to CWD;
- Possible risks to human health, including primate studies and comparison of deer and human prion genetic and molecular structures;
- Attitudes, behavior, and desires of hunters and landowners in relation to CWD;
- Analysis of deer removal efforts in SW WI and changes in deer population size;
- Computer modeling to evaluate alternate management strategies;
- Better diagnostic tools for detecting the disease;
- Development of techniques to detect CWD prions in the environment.

Information from these projects is being used to evaluate the effectiveness of disease control activities and in making management decisions about future control strategies.

Some of the initial findings from these research studies can be found throughout this document. Additional findings include:

- Virtually all white-tailed deer in Wisconsin are genetically susceptible to CWD;
- Bucks and does have small annual home ranges in the southwest Wisconsin affected area and bucks did not move long distances during the rut or during the gun deer hunting season;
- Sixty-five percent of yearling bucks dispersed an average of 4.3 miles, but most were killed before establishing a new home range;
- Deer removals in the SW DEZ were higher in areas of higher deer densities, from areas where there was more landowner interest in the CWD management program, and from areas in proximity to the area of highest CWD prevalence;
- Hunters in the DEZ expressed strong support for the bans on feeding and baiting in the CWD affected areas;
- Deer activity was higher at feeding sites than in natural winter browse areas and there was more close contact among deer at bait piles than when bait was broadcast.

Research on diagnostic tests for CWD has already resulted in the adoption of screening tests that significantly shorten the time required to notify most hunters of the status of their deer.

Communication

Providing the public with timely, complete, and accurate information about CWD is a key part of the CWD control plan. Public support for the control plan is heavily dependent on the public's perception of the legitimacy of the information provided by the state. During the past three years public outreach was accomplished through statewide public meetings, personal communications, local government meetings, web pages, special publications, and news releases. One-on-one communications between department staff and landowners in the affected area was a primary focus of communication efforts during summer and fall 2003 and 2004. Significant publications include *Understanding Chronic Wasting Disease in Wisconsin: the First Step to Disease Control*, two issues of *Chronic Wasting Disease Update*, "Ask Scott" columns in local newspapers, and newsletters to landowners in the affected areas. In addition, a toll-free CWD information line 1-877-WISC CWD (1-877-947-2293) has been implemented to provide hunters, landowners, and the general public with CWD information.



A recent review of state agency CWD web sites found that Wisconsin's site provided more press releases and maps than other states and only Wisconsin included information on public opinion research related to CWD. Wisconsin was one of only 2 states to include independent reviews of their management strategies on their web sites. Wisconsin's system for management of CWD test results and interactive web mapping tools are recognized as national models for the management and display of CWD data.

A statewide survey of deer hunters in 2002 found that a clear majority of hunters agreed that the information about CWD provided by the DNR was believable and that the agency provided enough information for hunters to make sound decisions on actions to take regarding CWD. Additionally, 63% of hunters in CWD affected counties and 57% of hunters in the rest of the state agreed that the DNR provided adequate opportunities to listen to their concerns and opinions about CWD. One measure of the effectiveness of the CWD communication strategy is that more than 90% of hunters in the CWD eradication zone who responding to a survey in 2003 were aware of the rewards offered for shooting CWD positive deer.

Disease Prevention and Control

Options for control of CWD are limited because no vaccine or proven preventive strategy is available to prevent infection of susceptible animals and there are no proven treatments for infected individuals. The long incubation period, possible environmental contamination with a persistent pathogen, and an incomplete understanding of the routes of transmission further limits options for control of CWD. Because of the difficulty in eradicating CWD from wild populations once it is established, a high priority is preventing establishment of new disease foci.



The National CWD Management Plan recognizes reduction of host populations as the disease control method most likely to be effective in eliminating CWD in the wild. Additionally, the expert scientific panel who recently reviewed CWD in Canada recommended substantial deer population reductions to control and eliminate CWD. Removing as many deer as possible, each year, from infected areas provides the best opportunity for controlling the disease by 1) removing infectious individuals from the population, 2) reducing the number of susceptible animals below the threshold needed for the disease to persist, and 3) limiting the accumulation of infectious CWD prions in the environment. By increasing the number of deer removed from the population each year, the remaining population will be predominantly young, with few older age-class animals in the population to transmit the disease. Older aged animals (3 years old and older) have been shown to have the highest levels of infection. In addition, the remaining population will have a lower density, so contact between individual animals or groups of animals will be reduced. This is expected to reduce the rate of disease transmission, as well as the number of deer that disperse from the population. Annual removal of infected animals should be greater than the number of deer that are newly infected with the disease each year, and over time this should result in reduced prevalence of the disease and eventually in its elimination.

Wisconsin has implemented an aggressive disease management program in an effort to control the spread of CWD and attempt to eradicate it from both the wild and farm-raised deer and elk in the state. To help prevent the establishment of new disease foci, the DNR revised wildlife rehabilitation policies to prohibit the rehabilitation of sick or injured adult deer and rearing of “orphaned” fawns from counties affected by CWD. In addition, because movement of infected carcasses is a possible mechanism for spread

of CWD, legislation was introduced in 2004 to regulate the in-state and interstate movement of deer and elk carcasses from CWD affected areas. However, the legislation was not passed during the legislative session. Hunters have been advised of risks associated with carcass transportation and safe disposal procedures for potentially infectious tissues such as brain and spinal cords.

The primary CWD control strategies used for wild deer include: 1) substantial deer population reduction in the know affected areas, 2) reducing deer populations around the affected area to establish a buffer zone to limit the spread of CWD, and 3) banning baiting and feeding of deer in the affected area and the buffer zone to limit the transmission of the disease. In addition, a CWD monitoring and control program has been developed to identify and eliminate CWD from farm-raised deer in Wisconsin.

Disease Eradication Zone_____

The DNR has established a disease eradication zone (DEZ) in southwestern Wisconsin that has expanded from 411 mi² to approximately 1,300 mi² as surveillance activities detected additional positive deer. In addition, a smaller eradication zone (approximately 300 mi²) has been established in Rock and Walworth counties in southeastern Wisconsin. Population goals in the DEZs are less than 5 deer/mi² of habitat.

Deer population reduction methods in the DEZs have included 1) extended hunting seasons with liberal bag limits, 2) out-of-season shooting permits issued to landowners, and 3) government agency sharpshooters. An unlimited number of “earn-a-buck” permits were issued to hunters, requiring them to take an antlerless deer before they were allowed to harvest a buck. Earn-a-buck permits were used to focus the harvest on the antlerless (doe and fawn) component of the population because harvesting of antlerless deer has the greatest effect on reduction of deer populations.

Out-of-season landowner permits and agency sharpshooters were used in summer 2002 and winter 2002-03 in the southwest DEZ. Agency sharp-shooting activity and landowner permits during winter 2003-04 were concentrated in the southeast counties. Government sharpshooters were used in fall and winter 2004-05 to target areas of high prevalence and high deer density within the DEZs. Government sharpshooters were also used in selected areas around outlying positive cases to facilitate collections of larger surveillance samples to better understand the distribution and intensity of the disease on the periphery of the DEZs. In all cases, government shooters worked with landowner permission on both public and private lands.

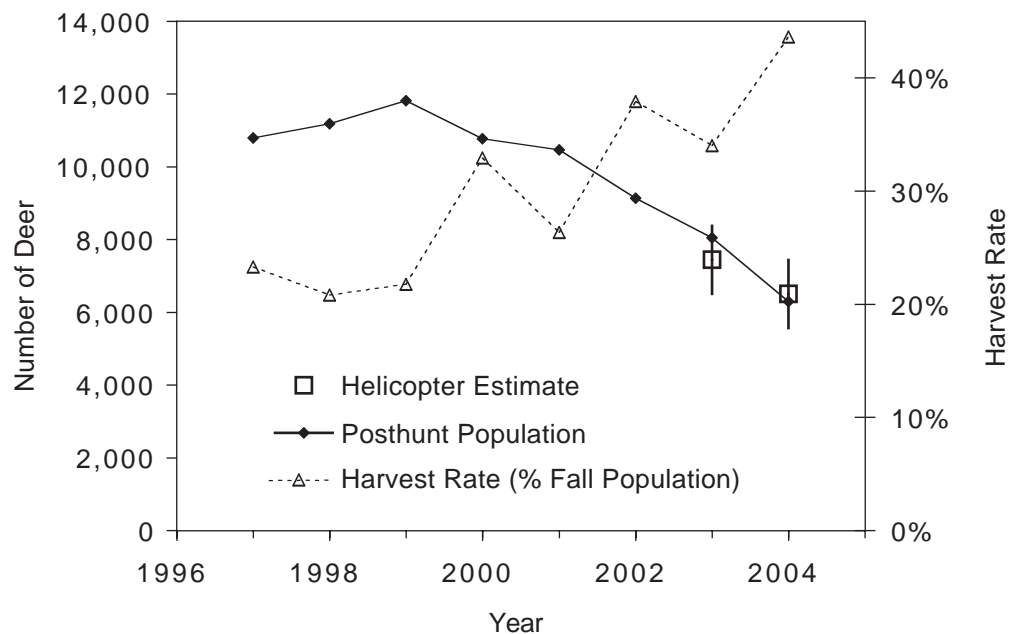
Whitetails Unlimited, in partnership with the DNR, offered a 2-part reward program in 2003 and 2004 for hunters and landowners that harvested deer in the CWD affected area. The *Focus on Positives* part of the program paid \$400 for each CWD positive deer, split evenly between the landowner and the hunter. The *Every Deer Helps* part entered each hunter who registered a deer in the DEZ into a lottery, potentially eligible for \$20 payment for each deer registered. A total of \$250,000 was available for the reward program. In 2003, after payment for the positives, sufficient funds were remaining to pay for more than 10,000 deer shot under the *Every Deer Helps* program.

Over 9,200 deer were removed from the eradication zones in 2002-03, nearly 13,700 deer were removed in 2003-04 and approximately 16,000 were removed in 2004-05. More than 70% of the deer shot in the 2002-03 season were antlerless, 64% were

antlerless in 2003-04, and approximately 69% were antlerless in 2004-05. A survey of hunters in the southwest DEZ in 2003 found that they hunted 4 days longer and harvested about twice as many deer compared to hunters outside of the CWD management zones.

Aerial surveys have been conducted in late winter 2003, 2004, and 2005 to monitor deer population changes in the southwest DEZ. Average density in winter 2005 was estimated to be 28 deer/mi² of habitat. A 35% population reduction between winter 2003 and 2005 was estimated for the core area of the DEZ where disease prevalence is highest. Cumulative population reduction since 2001 for deer management unit 70A which is entirely within the DEZ is estimated to be 40%, from 48 to 29 deer/mi². Antlerless harvest rates during 2002-2004 for 70A were estimated to average 39% of the fall population, compared to an average of 25% during the previous 5 years.

Antlerless Harvest Rates and Posthunt Population Estimates DMU 70A



Herd Reduction Zone

Deer management units surrounding the areas known to be affected by CWD have been included in a Herd Reduction Zone (HRZ). The HRZ extends out to approximately 40 miles from the disease eradication zone. Deer population goals for units in the HRZ are 10 deer/mi² of habitat, establishing a buffer zone to limit the spread of CWD. Extended hunting seasons and liberal bag limits are the primary tools being used to reduce deer populations in the HRZ. Similar to the DEZ, hunters were issued an unlimited number of earn-a-buck permits. More than 41,500 deer were taken (75% were antlerless) in the HRZ in 2002-03, approximately 53,500 deer (73% antlerless) were harvested 2003-04, and approximately 54,800 deer (74% antlerless) were killed in 2004-05.

Baiting and Feeding

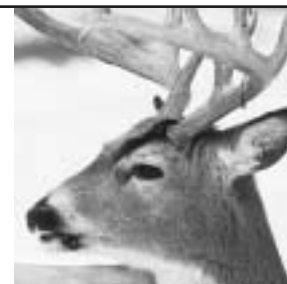
Baiting and feeding artificially concentrates deer and facilitates increased animal-to-animal contact and exposure to CWD-containing excreta. A consequence of increased contacts is an increased risk of disease transmission among deer. Wildlife disease experts have repeatedly emphasized the critical importance of preventing the feeding and baiting of deer and elk. The national CWD management plan recommends the elimination of baiting and feeding of deer as a control strategy for containing and eradicating CWD.



In 2002 the DNR enacted an emergency rule to ban statewide the use of bait for deer hunting and the artificial feeding of deer to minimize the probability of CWD transmission. Compromise legislation restricting baiting and feeding passed the legislature and was signed into law in 2004. Baiting and feeding are banned in counties entirely or partially located within CWD management zones or within 10 miles of a captive or free-ranging animal that has tested positive for CWD or TB. Currently 26 counties are included within the ban. Elsewhere, baiting and feeding is restricted to 2 gallons per site and the placement of bait and feeding sites is regulated.

Captive Cervids

There are approximately 720 registered deer and elk farms in Wisconsin containing about 30,500 animals. The majority of animals on the farms are white-tailed deer and elk but other species include mule deer, red deer, sika deer, fallow deer, muntjac, reindeer, and Chinese water deer. The discovery of CWD in Wisconsin has led to major changes in the regulation of farmed deer and elk. It is no longer legal to accept orphaned or injured deer from the wild into farms or to fence in property and capture wild deer. Cervid farms must be enrolled in the CWD monitoring program to sell live animals. The CWD monitoring program requires an initial herd census with official individual animal identification and annual reports accounting for where every animal on the farm came from or went in the past year.



Currently 544 herds are enrolled in the monitoring program. Those farms that have not enrolled are mostly hobby farms or hunting preserves, neither of which ships live animals. All farms, whether enrolled in the monitoring program or not must CWD test every deer or elk that is 16 months old or older that dies or goes to slaughter. As of February 2005, over 10,850 farm-raised deer and elk had been tested. Importation of deer and elk into Wisconsin requires a permit from the State Veterinarian, a certificate of veterinary inspection, proof that they are free of TB and brucellosis, official identification numbers on the animals, and documentation that they come from a herd with no evidence of CWD in the past five years. This last requirement amounts to a temporary moratorium on many deer and elk imports because most states did not begin surveillance until recently. Deer and elk farms are required to meet fencing standards. Producers are required to report escapes within 48 hours. The DNR has authority to kill escaped farm-raised animals if they are not immediately recaptured.

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) published a proposed rule to establish a herd certification program with the goal of eliminating CWD from captive cervids in the U.S. Participating producers would have to follow program requirements for animal identification, testing, herd management, and movements of animals into and from herds. APHIS is providing indemnity and funds for testing and carcass disposal for voluntary depopulation of positive and exposed captive herds and trace animals.

As of February 2005, 29 farm-raised white-tailed deer and 1 elk have tested positive for CWD on 7 farms in Wisconsin: 17 white-tailed deer on a Portage County hunting preserve, six white-tailed deer from a Walworth County farm, 3 white-tailed deer on a second Walworth County Farm, one white-tailed deer each on a farm in Crawford County, Sauk County and in Racine County, and one elk in a Manitowoc County herd. Five of the seven herds had been depopulated and the owners were indemnified. The destruction of the Portage County herd has been delayed for 2 years because the owner is contesting the order and the animals remain under quarantine.

As of February 2005, 2 herds are quarantined because CWD positive deer have been found on their farms. Ten herds are quarantined because they are located within a DEZ, and four herds are quarantined as exposed or source herds.

The DNR conducted an extensive audit of captive white-tailed deer farms in 2002 prior to the transfer of authority over these farms to DATCP. DNR wardens visited 550 farms. The audit found the majority of farms were in compliance with existing state laws; however, 77 farms were found to be in violation of fence specifications. White-tailed deer farms contained more than 16,000 deer. More than 400 unrecovered escaped deer were reported from 182 farms during the lifetime of their operation. The quality of record keeping was variable and tracking of individual deer without individual identification was almost impossible. During the prior 3 years at least 1,200 deer died on deer farms due to various reasons. Disease testing was not required nor performed for a majority of these deer.

From April 7, 2003 to early February, 2005 DNR law enforcement has reported 82 additional deer farm escapes involving a total of 314 animals.

Deer Farm Escapes by DNR Region – April 7, 2003 to early February, 2005

DNR Region	# of Reported Escapes	# of Counties Involved	Total # of Animals
Northeast	34	12	117
Northern	7	3	37
West Central	22	10	85
South Central	14	7	61
Southeast	5	3	14
Totals	82	35	314

Public Reaction and Support

The Department has assessed public support for our CWD management efforts by conducting or participating in a number of surveys. Below is a brief summary from different surveys asking two similar questions of Wisconsin hunters and landowners during the past three years. The results are fairly consistent across all the studies.

Effort should be taken to eliminate CWD from the wild deer population.

	% Agree	% Disagree	% Unsure
Hunter Effort (UW-Stevens Point, 2003)			
DEZ	79	13	8
Non-DEZ	86	8	5
LE Statewide Gun Deer Hunter Study (2004)			
CWD area hunter	68	15	17
Outstate hunter	81	10	10
SW Landowner Study (2004)			
Hunter	65	25	9
Non-hunter	70	19	11
WAFWA (Colorado State University, 2004)			
Resident hunters	80	12	8
Non-resident hunters	86	7	7

Taking everything into consideration, what letter grade would you assign for the job the DNR has been doing handling CWD?

	% A – B	% B – C-	% D – F
First CWD Gun Hunter Study (2002)			
CWD counties	49	37	14
Outstate	49	39	12
Hunter Effort (UW-Stevens Point, 2003)			
DEZ	56	31	14
Non-DEZ	53	39	8
LE Statewide Gun Deer Hunter Study (2004)			
CWD area hunter	55	35	9
Outstate hunter	63	36	2
SW Landowner Study (2004)			
Hunter	47	41	11
Non-hunter	31	60	10
WAFWA (Colorado State University, 2004)			
Resident hunters	49	42	10
Non-resident hunters	64	33	4

It is clear from these data that a strong majority of hunters want CWD eliminated from Wisconsin and do not want CWD to spread to the area where they hunt. Support for Department actions to achieve this goal is not as strong, but most hunters give the Department a good grade for our efforts to date. It is important to continue to ask these same questions in future surveys to assess changes in attitudes toward disease management.

Budget

The DNR has spent over \$20 million since 2002 in its CWD surveillance, management, and eradication efforts. Funding has come primarily from hunting license revenue, with minimal outside funding. This has required the Department to redirect wildlife program staff and program dollars to maintain the emphasis on CWD management and control. However the Department feels spending \$5 million annually toward CWD management is a good investment in light of the importance of deer hunting to Wisconsin and deer hunting's nearly \$1 billion impact on the state's economy each year. The funds to manage CWD have come from the following funding sources:

FY05 – *Projected* to spend \$5.6 million on CWD

Sources of Funds:

Wildlife Damage Account - \$1.46 million

Pittman Robertson - \$0.5 million

USDA - \$1.2 million

Reallocated DNR funds – generally Conservation Seg - \$2.5 million

FY04 – Spent \$4.7 million on CWD

Sources of Funds:

Wildlife Damage Account - \$1.2 million

Pittman Robertson - \$0.6 million

USDA - \$240,000

DNR indirect funds - \$360,000

Reallocated DNR funds – generally Conservation Seg - \$2.3 million

FY03 – Spent \$12.6 million on CWD

Sources of Funds:

Wildlife Damage Account - \$3.3 million

Pittman Robertson unobligated funds - \$0.5 million

State recycling fund - \$1 million

Reallocated DNR funds – various DNR funding sources - \$7.8 million

FY02 – Spent \$1.5 million from Conservation Seg

What Does the Future Hold?

During the first 3 years of Wisconsin's CWD control program we have conducted extensive testing across the state to investigate the distribution and prevalence of the disease. We have made significant progress toward reducing the free-ranging deer population in the affected areas, banned the baiting and feeding of deer in these areas to reduce transmission, and have started tracking and controlling CWD in Wisconsin's farmed cervids.

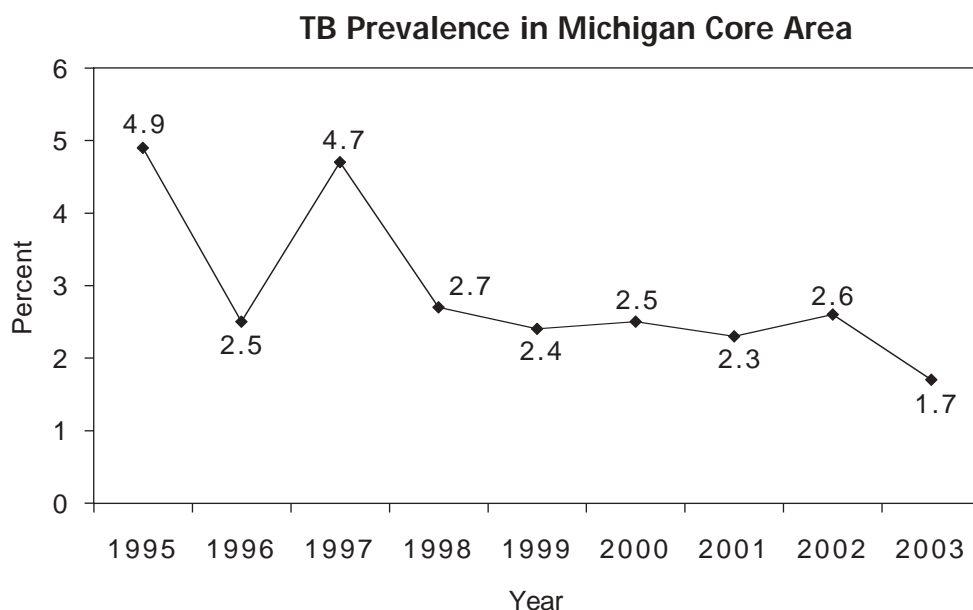


It is currently not possible to predict whether Wisconsin's CWD management program will be successful in eradicating CWD from the state. However, the consequences of not attempting to control the disease or an inadequate response are clear: the prevalence and geographic distribution of CWD will increase as will the impacts on the deer hunting culture of Wisconsin and related industries and businesses.

It is also not possible to predict with certainty how long it will take to know whether the disease control program is effective. The results of ongoing research studies are needed to better understand the dynamics of the disease, its potential for increase and spread, the role of environmental transmission, and the expected response to management actions. It may require an additional 4-6 years before enough information is available that we can reliably determine if the CWD control program is effectively reducing prevalence and size of the affected area.

Management programs to combat CWD should be regarded as long-term commitments of personnel and funding. Computer simulations suggest that successful CWD management programs may require 15-40 years. Possible parallels can be drawn from other animal disease control programs in livestock and wildlife. The US cattle brucellosis eradication program began in 1934. The infection level in the national beef herd was reduced from 11% in the 1930s to 5% in the 1940s, to less than 1% in the 1970s. The Australian bovine tuberculosis and brucellosis eradication programs required over 20 years.

Michigan initiated a program in the mid-1990s to eradicate bovine tuberculosis from its free-ranging deer population. Primary strategies to reduce TB transmission in deer were population reduction through hunting and a ban on baiting and feeding of deer. During the first 7 years of their TB program the deer population in the affected area was reduced nearly 40%. During the same period, TB prevalence in the core area declined from nearly 5% to less than 2%. The decline in prevalence was sufficiently large for the Michigan DNR to declare that they were "winning the war." However, they cautioned that "it's no time to back off" and urged "staying the course." They warned that successful eradication of TB might require another 10-20 years.



Successfully eradicating CWD from Wisconsin will require a sustained effort over many years, necessitating cooperation and communication among natural resource and agricultural agencies, hunters, landowners, and captive cervid producers. Although this will be a long-term effort, aggressive management early in the program is important to contain the spread of CWD, to minimize the size of the affected area and shorten the time required to eradicate the disease.

Acknowledgments

This report benefited from reviews by Dr. Julie Langenberg, Jerry Bartelt, Alan Crossley, Tom Hauge, Dr. Simon Hollamby, Dr. Michael Samuel, Dr. Shelby Molina, Dr. Richard Bourie, Dr. James Kazmierczak, and Terry Burkhardt.

Additional Information Can be Found at:

<http://dnr.wi.gov/org/land/wildlife/whealth/issues/CWD/index.htm>

<http://www.cwd-info.org/>

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